CLAIMS:

1. An electrical power system comprising:

a plurality of generators;

a plurality of loads that when summed determine a total power consumed which is provided by the generators; and

a bus electrically connecting each of the generators with each of the loads, wherein the bus is rated at less than the total power consumed but carries all of the total power consumed from the generators to the loads without overloading the bus.

2. The system as set forth in claim 1, wherein each generator is connected to a different point along the bus such that the total power consumed does not flow through any one point of the bus.

3. The system as set forth in claim 1, wherein each generator is connected to a different point along the bus such that the total power consumed is distributed throughout the bus without overloading the bus.

4. The system as set forth in claim 1, wherein each load is connected to a different point along the bus such that the total power consumed does not flow through any one point of the bus.

5. The system as set forth in claim 1, wherein each load is connected to a different point along the bus such that the total power consumed is distributed throughout the bus without overloading the bus.

6. The system as set forth in claim 1, wherein the bus is rated at approximately 13,800 volts and approximately 5,000 amps of operating current for a power rating of approximately 119,000,000 volt-amps under normal operations.

7. The system as set forth in claim 6, wherein the total power consumed exceeds 120,000,000 volt-amps.

8. The system as set forth in claim 6, wherein at least one of the loads requires more than 95,000,000 volt-amps.

9. The system as set forth in claim 1, wherein the bus is rated at approximately 12,500 volts and approximately 5000 amps of operating current for an approximate power rating of 107,000,000 volt-amps under normal operations.

10. The system as set forth in claim 9, wherein the total power consumed exceeds 110,000,000 volt-amps.

11. The system as set forth in claim 9, wherein at least one of the loads requires more than 95,000,000 volt-amps.

12. The system as set forth in claim 1, wherein the bus is rated at approximately 13,800 volts and approximately 3150 amps of operating current for an approximate power rating of 75,300,000 volt-amps under normal operations.

13. The system as set forth in claim 12, wherein the total power consumed exceeds 76,000,000 volt-amps.

14. The system as set forth in claim 12, wherein at least one of the loads requires more than 76,000,000 volt-amps.

15. The system as set forth in claim 12, further including a secondary bus such that the total power consumed exceeds 100,000,000 volt-amps

16. The system as set forth in claim 1, wherein the bus is rated at approximately 12,500 volts and approximately 3150 amps of operating current for an approximate power rating of 68,000,000 volt-amps under normal operations.

17. The system as set forth in claim 16, wherein the total power consumed exceeds 70,000,000 volt-amps.

18. The system as set forth in claim 16, wherein at least one of the loads requires more than 70,000,000 volt-amps.

19. The system as set forth in claim 16, further including a secondary bus such that the total power consumed exceeds 100,000,000 volt-amps

20. The system as set forth in claim 1, wherein the bus is rated at more than 2000 volts and more than 1000 amps, thereby determining a power rating.

21. The system as set forth in claim 20, wherein the total power consumed exceeds the power rating.

22. The system as set forth in claim 20, wherein at least one of the loads requires more than the power rating.

23. The system as set forth in claim 1, wherein the bus includes a current limiter device electrically connected between the generators, thereby allowing the generators to share the loads while preventing a short circuit current rating of the bus from being exceeded.

24. The system as set forth in claim 1, wherein the bus includes a current limiter device electrically connected between the loads, thereby allowing the generators to share the loads while preventing a short circuit current rating of the bus from being exceeded.

25. The system as set forth in claim 1, wherein the generators produce power at a voltage level of a largest one of the loads.

26. The system as set forth in claim 25, wherein the bus is rated at the voltage level of the largest one of the loads.

27. The system as set forth in claim 1, wherein each generator is connected directly to the bus without a transformer therebetween.

28. The system as set forth in claim 1, wherein a largest one of the loads is connected directly to the bus without a transformer therebetween.

29. An electrical power system comprising:

a bus having a bus rating including a voltage level;

a plurality of generators, each producing power at the voltage level, with each generator connected to a different point along the bus; and

a plurality of loads that when summed determine a total power consumed, wherein each load consumes power at the voltage level and is connected to a different point along the bus such that the total power consumed does not flow through any one point of the bus.

30. The system as set forth in claim 29, wherein the bus is rated at approximately 13,800 volts and approximately 5,000 amps of operating current for an approximate power rating of approximately 119,000,000 volt-amps under normal operations and the total power consumed exceeds 120,000,000 volt-amps.

31. The system as set forth in claim 30, wherein at least one of the loads requires more than 95,000,000 volt-amps.

32. The system as set forth in claim 29, wherein the bus is rated at approximately 13,800 volts and approximately 3150 amps of operating current for an approximate power rating of 75,300,000 volt-amps under normal operations and the total power consumed exceeds 100,000,000 volt-amps.

33. The system as set forth in claim 32, wherein at least one of the loads requires more than 95,000,000 volt-amps.

34. The system as set forth in claim 29, wherein the bus includes a current limiter electrically connected between the generators, thereby allowing the generators to share the loads while preventing a short circuit current rating of the bus from being exceeded.

35. The system as set forth in claim 29, wherein the bus includes a current limiter electrically connected between the loads, thereby allowing the generators to share the loads while preventing a short circuit current rating of the bus from being exceeded.

36. A liquified natural gas (LNG) facility employing one or more refrigerants to cool a natural gas stream, said LNG facility comprising:

a plurality of compressors to compress said one or more refrigerants;

a plurality of electric motors to drive the compressors, wherein each motor contributes to a total power consumed and consumes power at a voltage level;

a plurality of generators to power the motors, each producing power at the voltage level; and

a bus rated at the voltage level, wherein each generator and motor is substantially directly connected to a different point along the bus such that the total power consumed does not flow through any one point of the bus.

37. The LNG facility as set forth in claim 36, wherein the voltage level exceeds 2000 volts.

38. The LNG facility as set forth in claim 36, further including a plurality of turbines fired by the natural gas to drive the generators.

39. The LNG facility as set forth in claim 36, further including a plurality of current limiters distributed along the bus, thereby allowing the generators to cooperate in providing the total power consumed while preventing a short circuit current rating of the bus from being exceeded.

40. A method of designing an electrical power system to supply power to electric motors, the method comprising the steps of:

(a) summing the motors' power requirements, thereby calculating a total power consumed;

(b) calculating a quantity of generators, each having a given generation capacity, to adequately supply the motors' power requirements;

(c) adding one to the quantity, thereby accommodating all of the motors if one of the generators should cease supplying power to the system;

(d) selecting a bus, wherein the bus is rated at less than the total power consumed; and

(e) determining where each generator and each motor should be connected to the bus in order to prevent the bus from becoming over-loaded.

41. The method as set forth in claim 40, wherein step (e) comprises using Kirchoff's current law.

42. The method as set forth in claim 40, further including the step of determining where each of a plurality of current limiters should be connected to the bus in order to prevent the bus from becoming over-loaded during a short-circuit.